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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,033	07/16/2003	Wipul Jayasekara	SJO920000096US4	2252

7590 01/23/2006  
Ron Feece  
INTERNATIONAL BUSINESS MACHINES CORPORATION  
Dept. L2PA  
5600 Cottle Road  
San Jose, CA 95193

EXAMINER

RENNER, CRAIG A

ART UNIT PAPER NUMBER

2652

DATE MAILED: 01/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/622,033

Applicant(s)

JAYASEKARA, WIPUL

Examiner

Craig A. Renner

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings were received on 16 July 2003. These drawings are accepted.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Hayashi et al. (US 6,542,342).

Hayashi teaches a magnetic read head (Fig. 10, for instance) having an air bearing surface, a magnetic tunnel junction sensor (includes 2-12, for instance) comprising a magnetic tunnel junction stack (includes 5-7, for instance) with an active region disposed at the air bearing surface and having two opposite sides each disposed generally orthogonally to the air bearing surface (as shown in Fig. 10, for instance), the magnetic tunnel junction stack comprising a first antiferromagnetic layer (4) spanning the active region, a pinned layer (5) of ferromagnetic material (lines 63-64 in column 3,

Art Unit: 2652

for instance) in contact with the antiferromagnetic layer (as shown in Fig. 10, for instance), a free layer (7) of ferromagnetic material (lines 65-66 in column 3, for instance) spanning the active region and extending beyond each of the two opposite sides thereof (as shown in Fig. 10, for instance), and a tunnel junction layer (6) of electrically nonconductive material (lines 64-65 in column 3, for instance) disposed between the pinned layer and the free layer in the active region (as shown in Fig. 10, for instance); and a second antiferromagnetic layer (10) formed from an insulating antiferromagnetic material (lines 1-5 in column 13, for instance, i.e., "Nioxide," for instance, is an insulating antiferromagnetic material) formed on and in contact with the free layer outside of the active region (as shown in Fig. 10, for instance) for biasing the magnetic moment of the free layer in substantially a predetermined direction in the absence of an external magnetic field [as per claim 1]; wherein the second antiferromagnetic layer is comprised of nickel oxide (lines 1-3 in column 13, for instance, i.e., "Nioxide" is nickel oxide) [as per claim 2]; and wherein the second antiferromagnetic layer is disposed without contacting the active region (as shown in Fig. 10, for instance) [as per claim 3].

### ***Response to Arguments***

4. Applicant's arguments filed 10 May 2005 have been fully considered but they are not persuasive.

The applicant argues that Hayashi does not teach "that the longitudinal bias layer is comprised of an non-conductive antiferromagnetic layer." This argument, however, is

not found to be persuasive as Hayashi does teach that longitudinal bias layer (10) is comprised of an non-conductive antiferromagnetic material (lines 1-5 in column 13, for instance, i.e., "Nioxide," for instance, is an non-conductive antiferromagnetic material).

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (571) 272-7580. The examiner can normally be reached on Tuesday-Friday 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A. L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2652

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Craig A. Renner  
Primary Examiner  
Art Unit 2652

CAR